



REMARKS/ARGUMENTS

This is in full and timely response to the Office Action dated September 13, 2006. The Examiner is respectfully requested to reconsider and withdraw the rejections made in the last Office Action based on the above amendments and the following remarks.

Claims 1 to 3, 5 to 7, 9 to 11, and 13 to 15 have been amended by this amendment.

Claims 1 to 16 remain pending for the Examiner's consideration.

Allowable Subject Matter

The Applicants note with appreciation that the Examiner has indicated claims 7, 8, 15 and 16 would be allowable if rewritten in independent form to include all of the limitations of the respective base claims. Accordingly, claims 7 and 15 have each been rewritten into independent form by incorporating the language of original independent claims 1 and 9, respectively. Claims 8 and 16 remain dependent upon claims 7 and 15. Accordingly, it is respectfully submitted that claims 7, 8, 15 and 16 are now in clear condition for allowance.

Correction of Formalities

On page 2 of the Office Action, the Examiner objected to the form of the abstract of the disclosure. To overcome this objection, the abstract has been carefully reviewed and revised to remove reference numerals, to shorten its length, and to place the abstract in single paragraph

format. As revised, the abstract is believed to be in full compliance with the current PTO rules and guidelines.

Claims 3, 4, 7, 8, 11, 12, 15 and 16 were objected to for the reasons stated on page 2 of the Office Action. All of the claims have been carefully reviewed and revised to correct the informalities noted by the Examiner, and particularly to provide antecedent basis for the phrase “the center plane” and the phrase “said cylindrical surface portion that forms part of said second reflective surface.” Reconsideration of these objections to the claims is respectfully requested.

Rejection of Claims 1, 3, 9 and 11 Based on Wohlers

Claims 1, 3, 9 and 11 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Wohlers (U.S. Patent No. 3,152,765). To the extent that this rejection might still be applied to the claims as amended, it is respectfully traversed for the following reasons.

Wohlers discloses a light projector that can be used, for example, to produce a substantially uniform lighting on a rectangular surface. The light projector includes a cylindrical reflecting cavity 1 located behind a luminous source 2 with an optical axis 3. Two curved reflectors 4 and 5 are provided on each side of the reflecting cavity 1. In the embodiment shown in Fig. 3, the contiguous portions between the curved reflectors 4, 5 and the reflecting cavity 1 are set closer to an opening of the projector than the center portion of the light source 2.

However, Wohlers does not teach or suggest that the reflecting cavity 1 has inclined flat surface portions or parallel flat surface portions as recited in Applicants’ amended claims 1 and 9. The reflecting cavity 1 of Wohlers is described in column 1, lines 54-55, as “a cylindrical

reflecting cavity” (emphasis added). Further, Fig. 3 of Wohlers shows only curved surface portions in the reflecting cavity 1, and no flat surface portions as in the Applicants’ invention.

To distinguish the Applicants’ invention from the teachings of Wohlers, independent claims 1 and 9 have each been amended to add the following additional limitations:

wherein said second reflective surface comprises:

a curved surface portion produced by setting the center portion of the light source as a center of a radius of curvature;

a pair of inclined flat surface portions that are contiguous with respective ends of said curved surface portion and extend in tangential directions therefrom; and

a pair of parallel flat surface portions that are substantially parallel with a center plane about which said pair of first reflective surfaces are symmetrical, said parallel flat surface portions intersecting said inclined flat surface portions.

Support for the amended claim language can be found in the Applicants’ original claims 2, 5, 10 and 13, and on pages 12 to 14 of the Applicants’ specification. Claims 2, 5, 6, 10, 13 and 14 have also been revised so that they are consistent with the amended language of claims 1 and 9 from which they depend.

It is respectfully submitted that independent claims 1 and 9, as amended, are not anticipated by Wohlers. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 3, 9 and 11 based on Wohlers.

Rejection of Claims 1 and 9 Based on Toshibumi in View of Wohlers

Claims 1 and 9 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Toshibumi (Japanese Patent Publication No. 09-166815) in view of Wohlers. The Examiner contends that Toshibumi ‘815 discloses all of the features recited in these claims,

except for the pair of first reflective surfaces being cylindrical. The Examiner relies upon Wohlers for a teaching of this feature. To the extent that this rejection might still be applied to claims 1 and 9 as amended, it is respectfully traversed for the following reasons.

Toshibumi '815 discloses an electronic flash device for a camera. The device includes a light emitting tube 1 and a reflector 8 for reflecting the light emitted from the tube 1. The reflector 8 includes an elliptic reflection surface 8a and a circular-arcuate reflection surface 8b formed about the outer peripheral part of the tube. In the embodiments shown in Figs. 4(A) and 4(B), Toshibumi '815 discloses arrangements in which contiguous portions between the elliptic reflection surface 8a and the circular-arcuate reflection surface 8b are set closer to an opening of the flash device than the center portion of the light tube 1.

However, Toshibumi '815 does not teach or suggest that the circular-arcuate reflection surface 8b of the reflector 8 has a combination of inclined flat surface portions and parallel flat surface portions as recited in Applicants' amended claims 1 and 9. Although Toshibumi '815 appears to include parallel flat portions at the front of the elliptic reflection surface 8a, there are no inclined flat surfaces as in the Applicants' claimed invention. Specifically, Toshibumi '815 fails to teach or suggest providing inclined flat surfaces as claimed between the parallel flat surfaces shown in Fig. 4 and the elliptic reflection surface 8a.

As explained above, Wohlers also lacks any teaching or suggestion of the claimed inclined flat surface portions and the parallel flat surface portions. As such, it would not have been obvious to modify the structure of the reflector 8 in Toshibumi '815 based on the teachings of Wohlers to arrive at the Applicants' claimed invention. Accordingly, the Examiner is

respectfully requested to reconsider and withdraw the rejection of claims 1 and 9 based on
Toshibumi '815 in view of Wohlers.

Rejection of Claims 2, 4 to 6, 10, and 12 to 14 Based on Toshibumi, Wohlers and Hideaki

Claims 2, 4 to 6, 10, and 12 to 14 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Toshibumi '815 in view of Wohlers, and further in view of Hideaki (Japanese Patent Publication No. 09-197497). The Examiner contends that Toshibumi '815 and Wohlers disclose the claimed invention, except for the claimed pair of inclined flat surface portions that extend in tangential directions from the contiguous portions. The Examiner relies upon Hideaki '497 for a teaching of this feature. To the extent that this rejection might still be applied to the claims as amended, it is respectfully traversed for the following reasons.

Toshibumi '815 and Wohlers are described above. As stated by the Examiner these references lack any disclosure of the claimed pair of inclined flat surface portions. Moreover, none of the cited references teach or suggest the claimed feature of a second reflective surface having a curved surface portion, a pair of inclined flat surface portions, and a pair of parallel flat surface portions, as recited in amended claims 1 and 9.

Hideaki '497 discloses an illuminator device having a light emitting tube 11 and a reflector 12. The reflecting surface 12a of the reflector 12 in the embodiment shown in Figs. 1 and 2 of Hideaki '497 includes an elliptic reflecting surface 12a having a focal point at the axial center S11 of the light tube 11. Cylindrical reflecting surfaces 12b, 12c, 12d are formed of circular arcs which are coaxial with the axial center S11 of the light tube 11.

Hideaki '497 does not teach or suggest a flash device reflector having a pair of parallel flat surface portions, and particularly not one in which inclined flat surface portions are provided between such parallel flat surface portions and respective ends of the curved surface portion of the reflector, as recited in the Applicants' amended claims 1 and 9.

Further, it would not have been obvious to modify the reflector structure of Toshibaumi '815 based on the teachings of Hideaki '497 to arrive at the Applicants' claimed invention. There is no suggestion or motivation found in either reference for modifying the reflector structure in Fig. 4 of Toshibaumi '815 to include inclined flat surfaces in conjunction with parallel flat surfaces, and particularly not to provide the inclined flat surfaces between the parallel flat surfaces and the respective ends of the curved surface portion of the reflector. Neither of the references teaches or suggests that such an arrangement or modification is possible, let alone desirable.

Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 2, 4 to 6, 10, and 12 to 14 based on Toshibaumi '815 in view of Wohlers, and further in view of Hideaki '497.

Conclusion

For at least these reasons, it is respectfully submitted that the Applicants' claimed invention is neither taught nor suggested by the prior art teachings of Wohlers, Toshibaumi '815, and Hideaki et al. '497. Accordingly, the Applicants respectfully submit that all of the pending claims 1 to 16 are now in condition for allowance, and request that a timely Notice of Allowance be issued for this application.

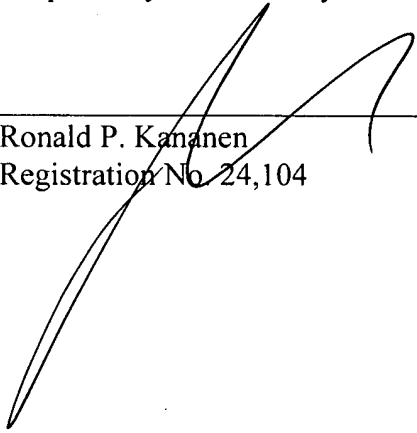
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PATENT APPLICATION

If the Examiner has any comments or suggestions that could place this application into even better form, the Examiner is encouraged to contact the Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted by:

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Ronald P. Kananen
Registration No. 24,104

RADER, FISHMAN & GRAUER, P.L.L.C.
1233 20th Street, N.W., Suite 501
Washington, D.C. 20036
Telephone: 202-955-3750
Facsimile: 202-955-3751
Customer No. 23353